

IN THE CLAIMS:

Please cancel claims 3-4 and 13-14 without prejudice or disclaimer, amend claims 1-2, 5-6, 11-12, 15-16, 17 and 19, and add new claims 21-24 as follows:

1. (Currently Amended) A mass spectrometer comprising:
 - an ion source which generates ions;
 - a mass filter which selects ions of a desired mass-to-charge ratio;
 - a 3D quadrupole ion trap for ejecting ions, after storing the ions generated by the ion source and stored for a certain period of time therein including a ring electrode and a pair of endcap electrodes, in which the selected ions are fragmented into ion fragments;
 - a Time-Of-Flight Mass Spectrometer (TOFMS) for accelerating the ions ejected from the ion trap in a direction orthogonal to the direction of their travel the ion fragments towards a detection means and measuring [[the]] time-of-flights of the accelerated ions ion fragments; and
 - a mass filter, which is disposed between the ion source and the ion trap and formed to control a second gas pressure inside the mass filter independently from a first gas pressure inside the ion trap
 - a controller which switches off an RF voltage applied to the ring electrode, and then applies a DC potential to the ring and endcap electrodes so as to eject the ion fragments from the ion trap into the TOFMS.
2. (Currently Amended) A mass spectrometer according to claim 1, wherein [[the]] a first gas pressure inside the ion trap is set to a level higher than [[the]] a second gas pressure inside the mass filter.
- 3-4. (Cancelled)
5. (Currently Amended) A mass spectrometer according to claim 1, wherein the mass filter is comprised of three-stage quadrupoles, said spectrometer further comprising:
and has a controller a means for controlling a gas pressure inside the mass filter so that the gas pressure inside the second one of the three-stage quadrupoles is

lower than those inside the first-stage and the third ones of the three-stage quadrupoles.

6. (Currently Amended) A mass spectrometer according to claim 2, wherein the mass filter is comprised of three-stage quadrupoles, said spectrometer further comprising:
and has a controller a means for controlling gas pressure inside the mass filter
so that the gas pressure inside the second one of the three-stage quadrupoles may be is lower than those inside the first-stage and the third ones of the three-stage quadrupoles.

7-10. (Cancelled)

11. (Currently Amended) A mass spectrometric method comprising:
generating sample ions at an ion source;
selecting ions of a desired mass-to-charge ratio by a mass filter;
fragmenting the selected ions in a three dimensional quadrupole ion trap
comprised of a ring electrode and a pair of endcap electrodes;
ejecting the ion fragments from the ion trap into the Time-Of-Flight Mass Spectrometer (TOFMS) using a controller which switches off a RF voltage applied to the ring electrode and then applies a DC potential to the ring and endcap electrodes
the ions after storing the ions generated in the ion source at a 3D quadrupole ion trap for a pre-set period of time; and
measuring time-of-flights of the ion fragments using the TOFMS which accelerates the ion fragments towards a detection means
analyzing the masses of the ions and/or fragments generated by ion dissociation using a Time of Flight Mass Spectrometer, wherein the Time of Flight Mass Spectrometer, accelerates the ions ejected from the ion trap in the direction orthogonal to the direction their travel; and
controlling the gas pressure inside a mass filter disposed between the ion source and the ion trap, independently from the gas pressure inside the ion trap.

12. (Currently Amended) A mass spectrometric method according to claim 11, wherein a first gas pressure inside the ion trap is set to a higher level than a second gas pressure inside the mass filter in the controlling step.

13-14. (Cancelled)

15. (Currently Amended) A mass spectrometric method according to claim 11, wherein the mass filter is comprised of three-stage quadrupoles, said spectrometer further comprising:

~~and has a controller a means for controlling gas pressure inside the mass filter so that the gas pressure inside the second one of the three-stage quadrupoles may be is lower than those inside the first-stage and the third ones of the three-stage quadrupoles.~~

16. (Currently Amended) A mass spectrometric method according to claim 12, wherein the mass filter is comprised of three-stage quadrupoles, said spectrometer further comprising:

~~and has a controller a means for controlling gas pressure inside the mass filter so that the gas pressure inside the second one of the three-stage quadrupoles may be is lower than those inside the first-stage and the third ones of the three-stage quadrupoles.~~

17. (Currently Amended) A mass spectrometric method ~~according to 11, further comprising:~~

generating sample ions at an ion source;

ejecting the ions after storing the ions generated in the ion source at a 3D quadrupole ion trap for a pre-set period of time;

analyzing the masses of the ions and/or fragments generated by ion dissociation using a Time-of-Flight Mass Spectrometer, wherein the Time-of-Flight Mass Spectrometer accelerates the ions ejected from the ion trap in the direction orthogonal to the direction of their travel;

controlling the gas pressure inside a mass filter disposed between the ion source and the ion trap independently from the gas pressure inside the ion trap;

selecting a peak, which has intervals between neighboring peaks on a mass spectrum exceeding a value pre-determined based on an isolation resolution of the mass filter, among peaks on the mass spectrum;

isolating the ion associated with the selected peak in the ion trap.

18. (Previously Presented) A mass spectrometric method according to claim 17, wherein the selected peak is displayed on a screen.
19. (Currently Amended) A mass spectrometric method according to claim [[12]]17, further comprising:
 - selecting a peak, which has the intervals between neighboring peaks on a mass spectrum exceeding a value pre-determined based on the isolation resolution of the mass filter, among peaks on the mass spectrum; and
 - isolating the ion associated with the selected peak in the ion trap,
wherein a first gas pressure inside the ion trap is set to a higher level than a second gas pressure inside the mass filter in the controlling step.
20. (Previously Presented) A mass spectrometric method according to claim 19, wherein the selected peak is displayed on a monitor screen.
21. (New) A mass spectrometric method according to 11, further comprising:
 - selecting a peak, which has intervals between neighboring peaks on a mass spectrum exceeding a value pre-determined based on an isolation resolution of the mass filter, among peaks on the mass spectrum;
 - isolating the ion associated with the selected peak in the ion trap.
22. (New) A mass spectrometric method according to claim 21, wherein the selected peak is displayed on a screen.
23. (New) A mass spectrometric method according to claim 12, further comprising:
 - selecting a peak, which has the intervals between neighboring peaks on a mass spectrum exceeding a value pre-determined based on the isolation resolution of the mass filter, among peaks on the mass spectrum; and
 - isolating the ion associated with the selected peak in the ion trap.
24. (New) A mass spectrometric method according to claim 23, wherein the selected peak is displayed on a monitor screen.